

76 Writing Polynomial Functions

Write a polynomial function that has 4 and 5 as zeros.

$$f(x) = (x-4)(x-5)$$

$$f(x) = x^2 - 9x + 20$$

Ex. 2 Write a polynomial function (that has rational coefficients and a leading coefficient of 1) and has 0 and 3, and -2 as zeros.

$$f(x) = (x-0)(x-3)(x+2)$$

$$= x(x-3)(x+2)$$

$$= x(x^2 - x - 6)$$

$$f(x) = x^3 - x^2 - 6x$$

Ex. 3 Write a polynomial function (that has rational coefficients and a leading coefficient of 1) and has 1 and -2, and -4 as zeros.

$$f(x) = (x-1)(x+2)(x+4)$$

$$= (x^2 + x - 2)(x+4)$$

$$= x^3 + 4x^2 + x^2 + 4x - 2x - 8$$

$$f(x) = x^3 + 5x^2 + 2x - 8$$